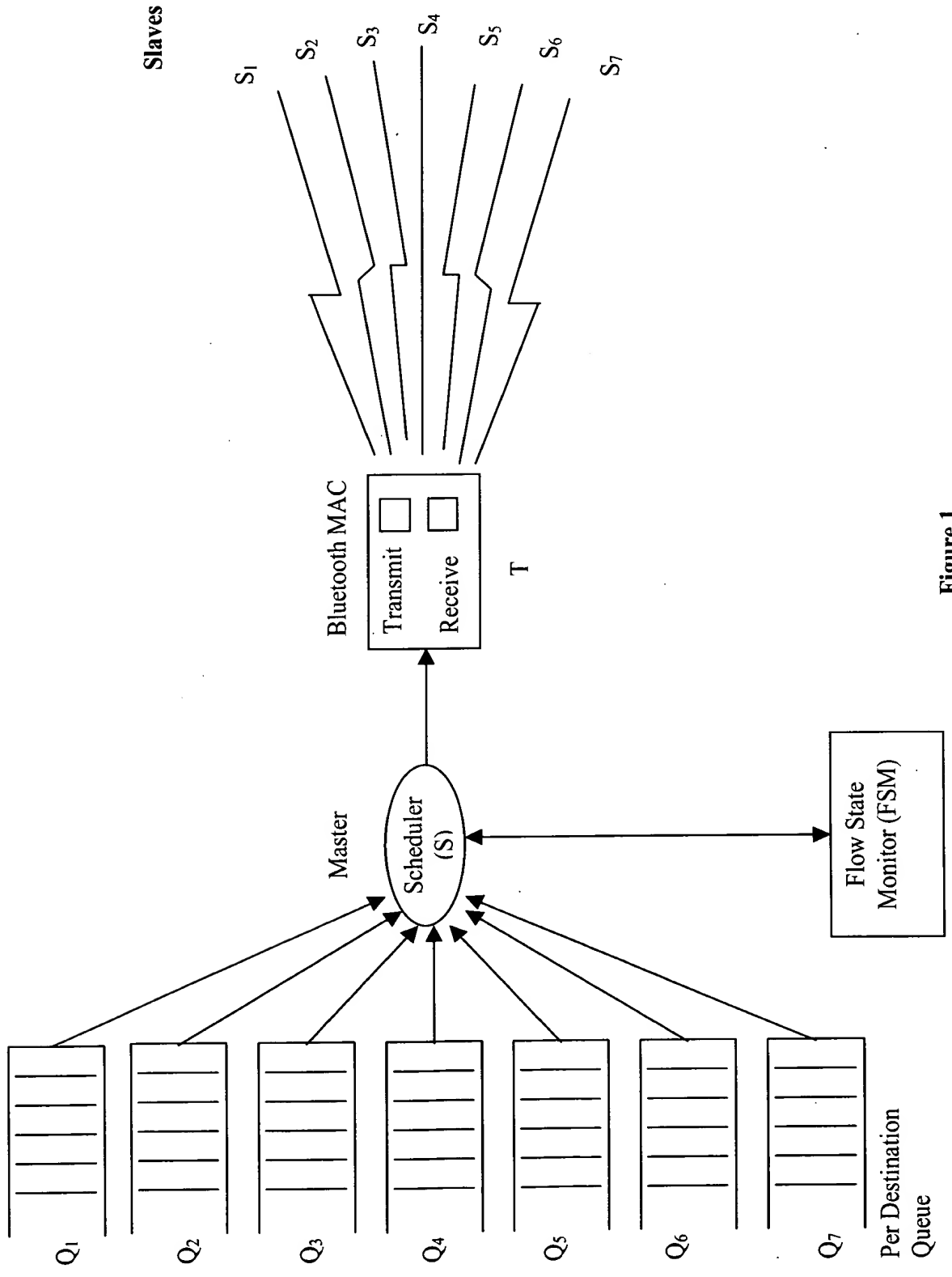
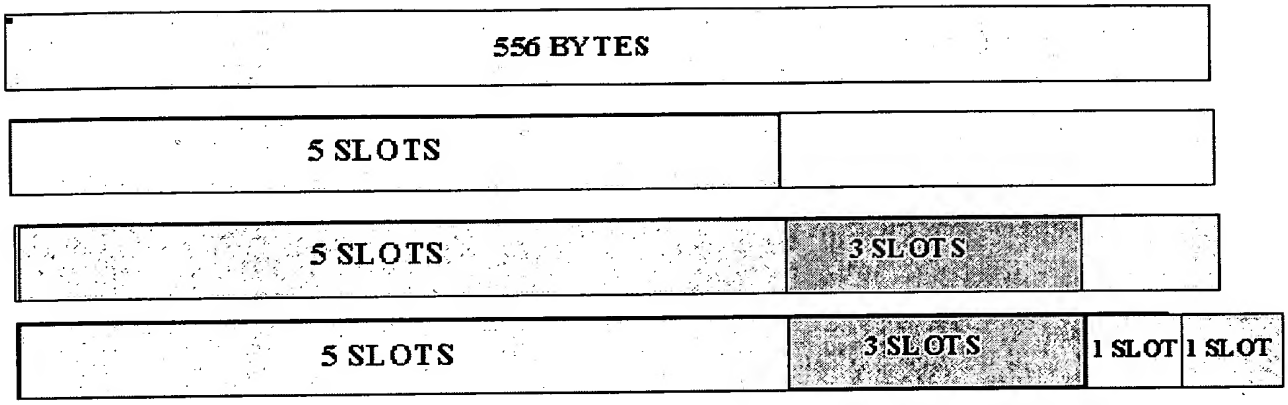

Slaves
S1
S2
S3
S4
S5
S6
S7
Bluetooth MAC
Transmit
Receive
T
Master
Scheduler (S)
Flow State Monitor (FSM)
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Per Destination Queue

Figure 1



SAR

Figure 2

0950045 - 2005050

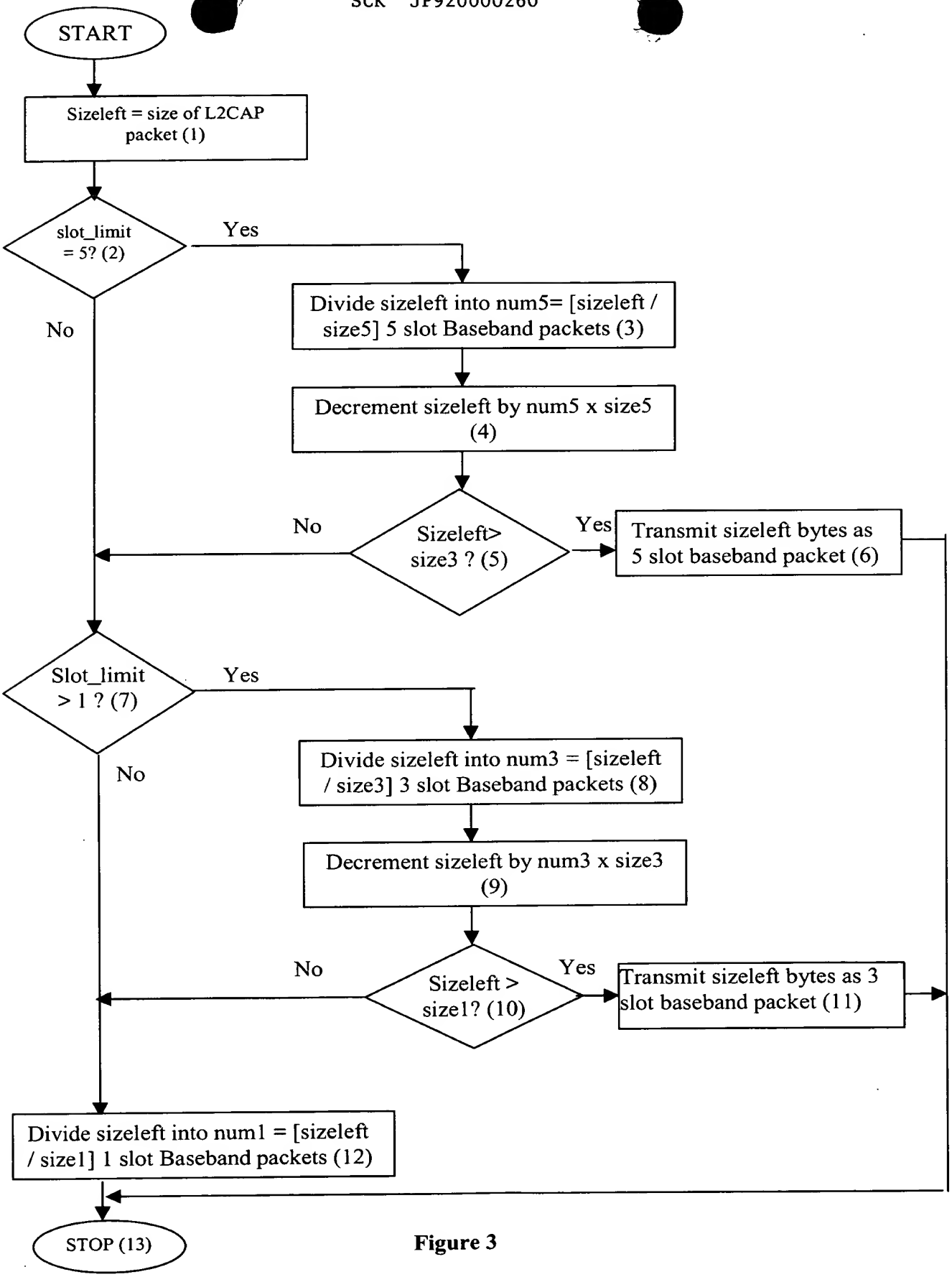

START
Sizeleft = size of L2CAP packet (1)
slot_limit = 5? (2)
Yes
No
Divide sizeleft into num5= [sizeleft / size5] 5 slot Baseband packets (3)
Decrement sizeleft by num5 x size5 (4)
Sizeleft> size3 ? (5)
No
Yes
Transmit sizeleft bytes as 5 slot baseband packet (6)
Slot_limit > 1 ? (7)
Yes
No
Divide sizeleft into num3 = [sizeleft / size3] 3 slot Baseband packets (8)
Decrement sizeleft by num3 x size3 (9)
Sizeleft > size1? (10)
No
Yes
Transmit sizeleft bytes as 3 slot baseband packet (11)
Divide sizeleft into num1 = [sizeleft / size1] 1 slot Baseband packets (12)
STOP (13)

Figure 3

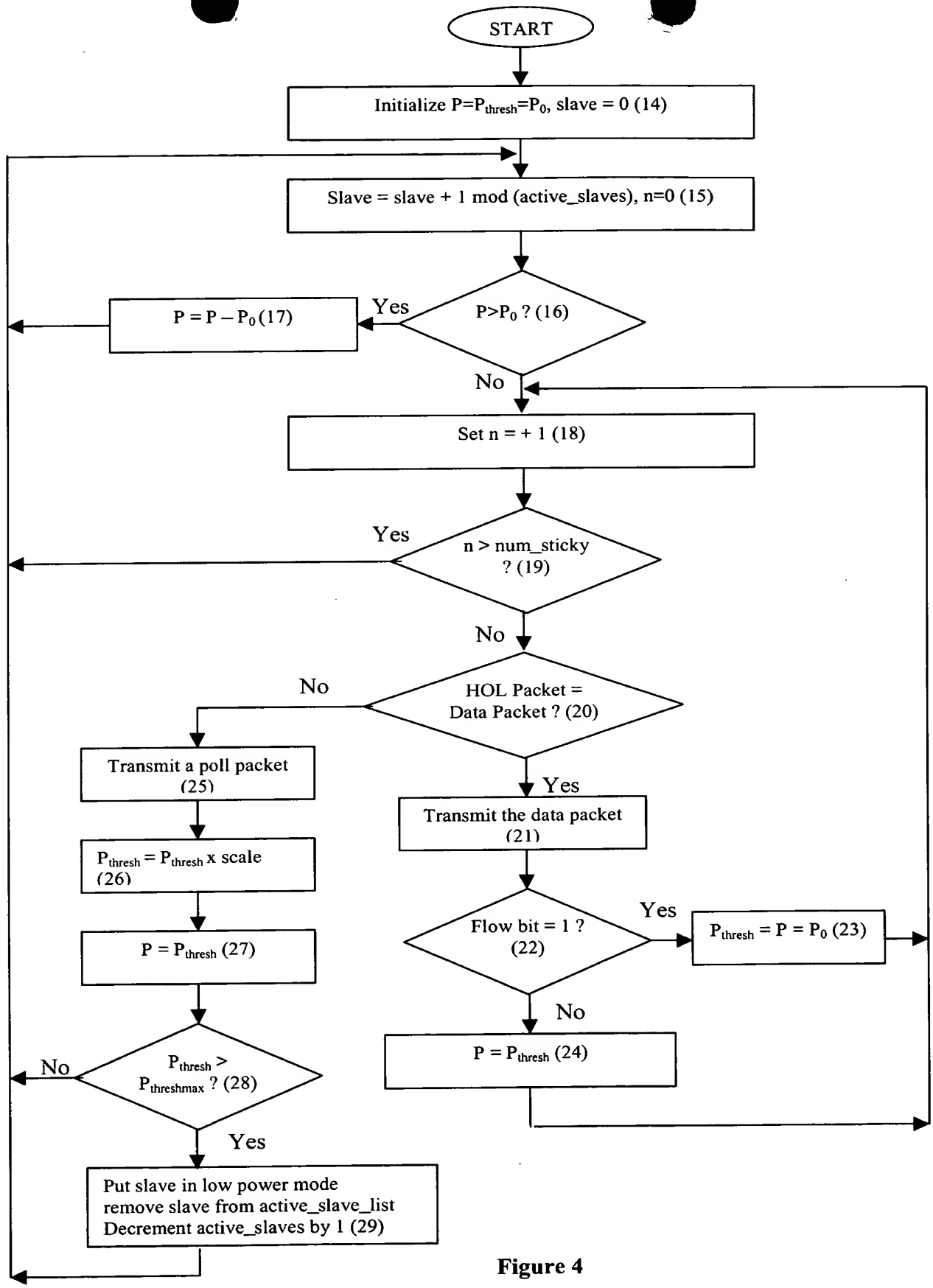

START
Initialize P=P_{thresh}=P_0, slave = 0 (14)
Slave = slave + 1 mod (active_slaves), n=0 (15)
P>P_0 ? (16)
Yes
P = P – P_0 (17)
No
Set n = + 1 (18)
n > num_sticky ? (19)
Yes
No
HOL Packet = Data Packet ? (20)
No
Yes
Transmit a poll packet (25)
Transmit the data packet (21)
P_{thresh} = P_{thresh} x scale (26)
Flow bit = 1 ? (22)
Yes
P_{thresh} = P = P_0 (23)
P = P_{thresh} (27)
No
P = P_{thresh} (24)
P_{thresh} > $P_{threshmax}$? (28)
No
Yes
Put slave in low power mode
remove slave from active_slave_list
Decrement active_slaves by 1 (29)

Figure 4

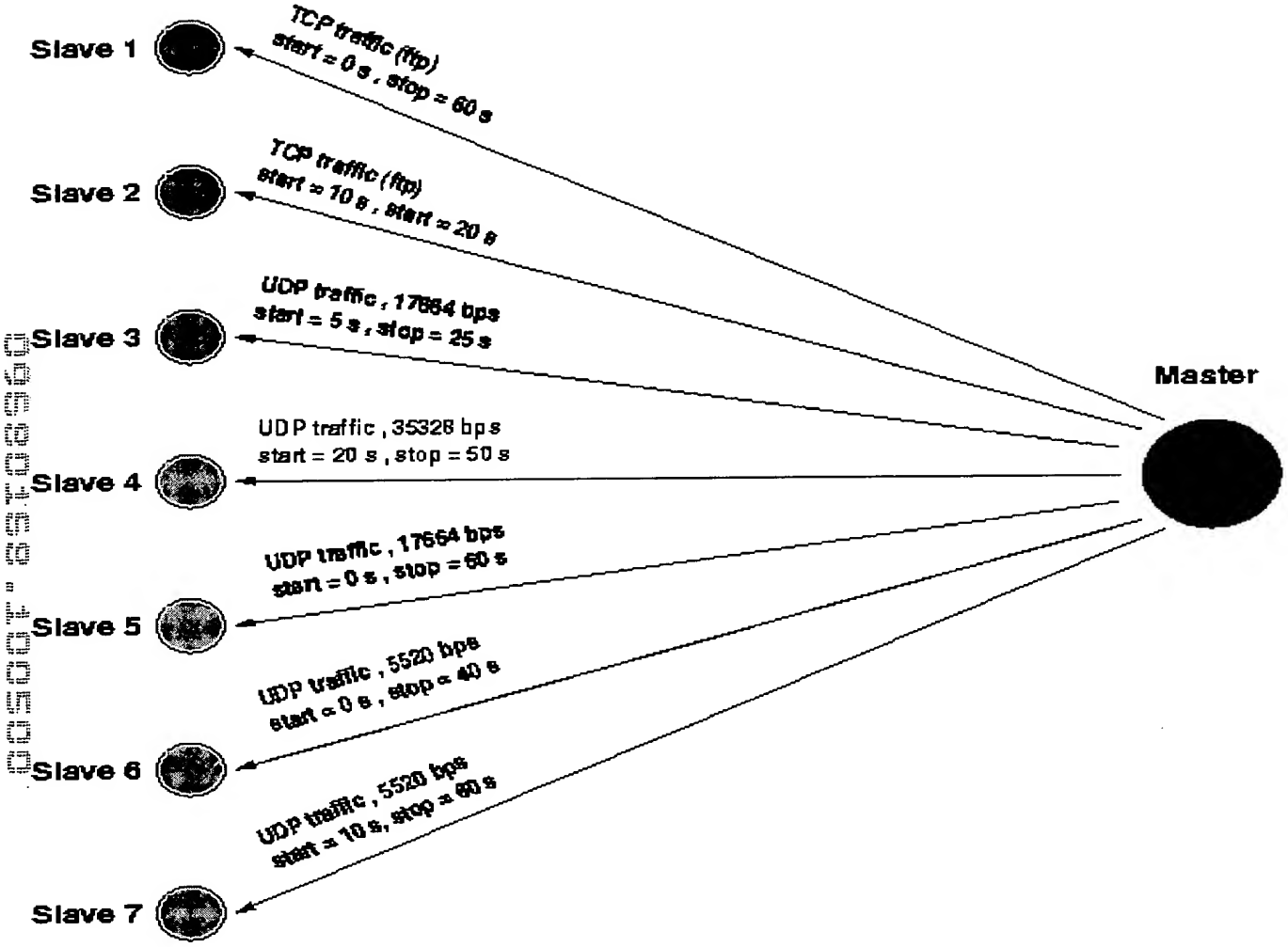


Figure 5 : Simulation Scenario

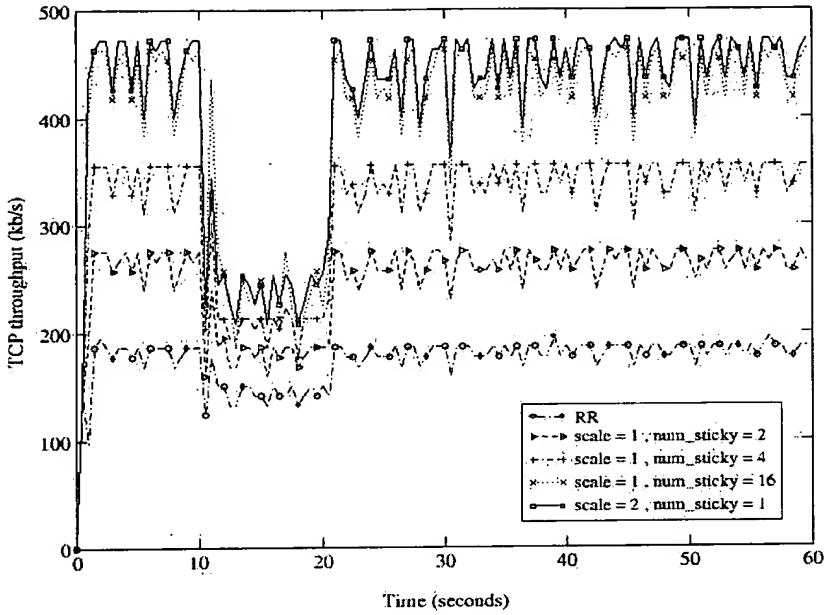


Figure 6: TCP throughput for different values of *num_sticky*

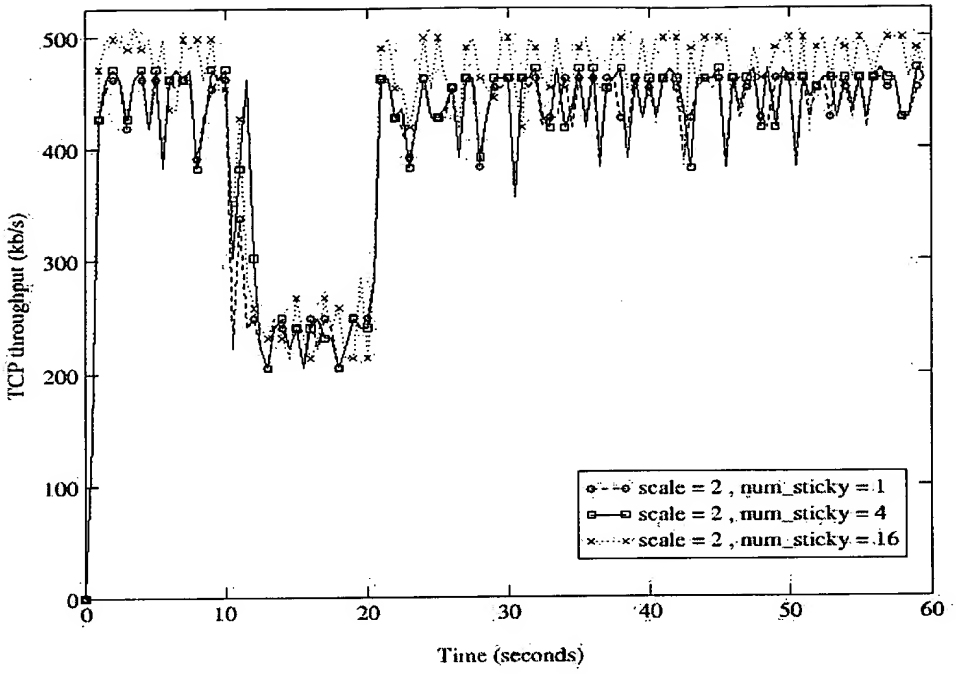


Figure 7: TCP throughput for different value of *num_sticky* with *scale* set to 2

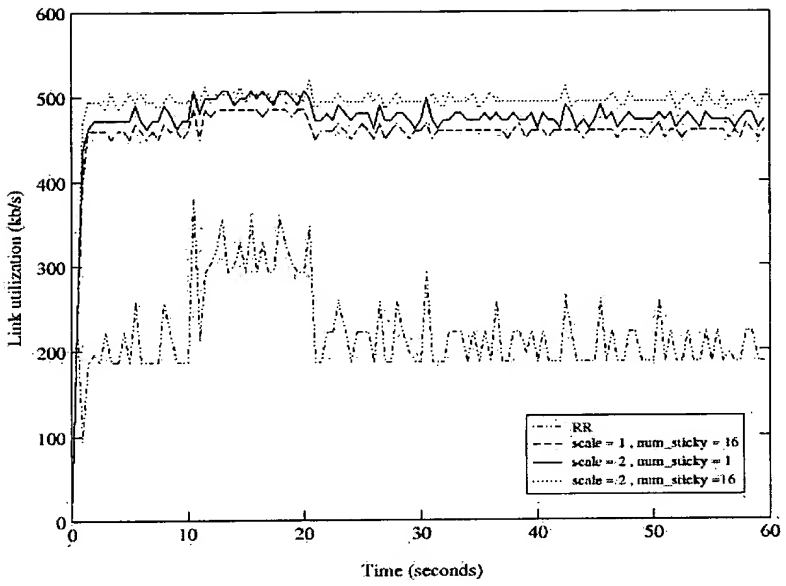


Figure 8: Link utilization with AFP variations

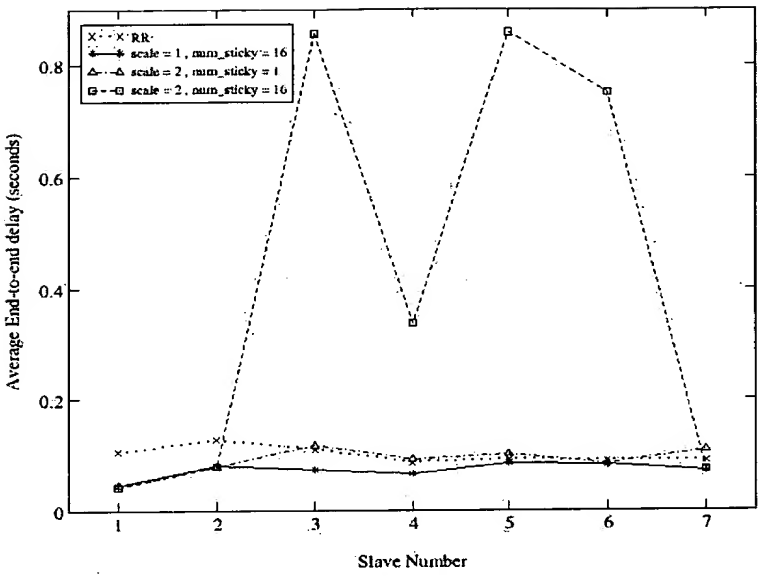

RR
scale = 1 , num_sticky = 16
scale = 2 , num_sticky = 1
scale = 2 , num_sticky = 16
Average End-to-end delay (seconds)
0
0.2
0.4
0.6
0.8
1
2
3
4
5
6
7
Slave Number

Figure 9